Understanding urban-rural linkages in water reuse for irrigated agriculture

*Impact of urban water pollution on irrigated agriculture*

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Focus of today:

- Understanding the importance of urban-rural interaction along the water chain
- Examples from a case study in South Africa
- Policy implications

Research activities on wastewater reuse in agriculture:

- Tanzania (October 2016)
- South Africa (October 2015 - November 2016)
- Spain (May – July 2015)
Urban-rural interaction in water management

▪ Trends of population growth, economic growth, urbanization and industrialization, all happening in a world affected by climate change.

▪ Increasing urban water consumption stresses the need for managing returning water flows.

▪ Understanding the link between urban return flows and irrigation practices contributes to ensuring water availability in agriculture.
Urban water pollution and agro-export production in the Elgin Valley, South Africa

- Fruit farming region
- Deterioration of the Palmiet River over the last decades
- Impact on production unknown

Special emphasis on the risk barriers and the combined effect to reduce adverse effects.
**URBAN POLLUTION**

- Pollution sources
- Water quality

**AGRICULTURAL PRACTICES**

- Coping strategies and the infrastructural/institutional risk reduction barriers

**Understanding the end-user gives more flexibility in water quality standards and design criteria.**

(AMOAH ET AL., 2011, P. I)
Research conclusions

▪ Water quality: localized areas of concern, downstream of urban settlements.

▪ Protection measures minimize the adverse effects of polluted water on crop production, health and access to export markets.
Policy implications

- It is possible to use urban return flows in irrigated agriculture without significant effects on crop production, health and access to export markets.
  - Implementing effective institutional and infrastructural layers of risk reduction are essential to minimize adverse effects.

- Guiding water quality standards based on agricultural practices strengthens farmers’ position for food quality certification and market access.

- Assessing the water use chain from an end-user perspective improves design and policy decisions based on the expected or desirable outcomes, adapting the water use chain for the intended use.
THANK YOU FOR YOUR ATTENTION!

Waste: a problem or a resource?

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Policy brief International WaTERS